REMARKS/ARGUMENTS

Claims 1 to 10 and 12 to 19 remain in this application. Claim 11 has been cancelled without prejudice. Claims 2 and 18 have been amended to incorporate the Markush language requested by the Examiner; it is respectfully submitted that this amendment overcomes the rejection of claims 2 and 18 under the second paragraph of 35 U.S.C. 112. Claims 1 and 9 have been amended to specify that the first cycloolefin copolymer has a molar-mass distribution (M_w/M_n) of less than 2 (see page 7, lines 9 to 10 for support) and to further specify that the resin is substantially free of zinc stearate (see page 10, lines 7 to 9 for support). Claims 2 and 9 have also been amended to correct minor typographical errors. Claim 15 has been amended to specify that the resin is substantially free of metal salts of fatty acids (see page 10, lines 7 to 9 for support).

Claims 1-3, 6,7 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by U.S. 5,270,393 (Sagane et al.); additionally, Claims 1-7 and 9 to 19 have been rejected under 35 U.S.C. 103(a) as obvious over Sagane et al. Claims 1-19 have also been rejected under 35 U.S.C. 103(a) as obvious over Sagane et al. and U.S. 5,965,665 (Fukuyama et al.) or further in view of U.S. 5,439,722 (Brekner et al.).

Sagane et al. discloses a blend of at least two or three cycloolefin random copolymers. In one embodiment, Sangane et al. discloses a cycloolefin random copolymer composition characterized in that the compositions contain a blend of at least two cycloolefin random copolymers obtained by copolymerizing ethylene and at least one cycloolefin represented by a formula as therein more particularly described, said copolymers having a softening temperature (TMA) of at least 70°C, an intrinsic viscosity, as measured at 135°C in decalin, of at least 0.01 dl/g (i.e., at least 1 ml/g) and a Mw/Mn ratio (weight average molecular weight to number average molecular weight ratio), as measured by GPC (gel permeation chromatography), of not more than 4, wherein the composition has an intrinsic viscosity as measured at 135°C in decalin of 0.2 to 0.7 dl/g (i.e., 20 to 70 ml/g) and a Mw/Mn ratio), as measured by GPC, of at least

3. In a second embodiment, Sangane et al describe compositions characterized as a blend of at least two cycloolefin random copolymers obtained by the copolymerization of ethylene and at least one cycloolefin represented by a formula as therein more particularly described, wherein the copolymers are described as having a softening temperature of at least 70°C and a weight average cycloolefin content (Cw) to a number average cycloolefin content (Cn) that satisfy certain described requirements. In a third embodiment, the citation discloses compositions characterized as a blend of a least three cyclolefin random copolymers as therein more particularly described, wherein such copolymers satisfy particular formulas and/or other requirements as to softening temperatures, weight percentages and haze.

Beginning at column 28, line 59, the patent references a variety of additional components that may be incorporated into the subject compositions, including "metal salts of fatty acids such as zinc stearate, calcium stearate and calcium 12-hydroxystearate; and fatty esters of polyhydric alcohols such as glycerol monostearate, glycerol monolaurate, glycerol distearate, pentacrythritol monostearate, pentaerythritol distearate and pentaerytritol tristearate."

Sangane et al. discloses that the blends therein described are "excellent in transferability of the pit" (see column 2, Object of the Invention). According to the patentees, "transferability of the pit" refers to a resin's ability to reproduce information from a master to a molded disc, by molding into the disc surface extremely small depressions or pits, the existence or non-existence of which corresponds to a signal of "0" or "1". The patentees note:

> If the resin used in the process mentioned above is low in flowability, no satisfactory transfer of the pit from the master disc to a fresh disc is attained sometimes and thereby causing an error in reading of the disc obtained because the pit usually has a very small diameter as of not more than 1 μm, and said resin is found to be poor in moldability. On the other hand, the transferability of the pit

is improved if a resin having a high flowability is used, but the resulting disc substrate is deteriorated sometimes in mechanical properties.

Under such circumstances, as mentioned above, the present Inventors found that resin compositions that are high in moldability and also excellent in transferability of the pit are obtained by using a blend of at least two kinds of cycloolefin random copolymers in such a manner that the specific requirements defined in the present invention are satisfied.... (See column 1, line 56 to column 2, line 6.)

Sangane et al. provides Examples describing polymerizations of numerous ethylene/cycloolefin random copolymers, as well as blends thereof. For instance, in Polymerization Examples 1 to 19, the patent describes copolymers A through T, which copolymers have Mw/Mn ratios ranging from 2.7 (copolymers D, J and M) to 6.3 (copolymer B). In Examples 1 through 7, and Comparative Examples 1 to 7 test specimens made from the copolymers or blends of two or more of the copolymers were prepared and evaluated. None of the exemplified blends contains a fatty acid ester of an aliphatic polyhydric alcohol. In some instances (Examples 6 and 7, and Comparative Examples 5 through 7, the patent reports a % haze value (albeit using a different test procedure than that described by the examples of the subject application) For instance, Examples 6 and 7 had % haze values of 4.5 and 3.9, respectively; Comparative Examples 5 through 7 had % haze values ranging from 3.7% (Comparative Example 6) to 18.9% (Comparative Example 5).

In accordance with the subject invention it was found that silver streaking and haze was reduced in a resin comprising a first cycloolefin copolymer (said first cycloolefin copolymer having a particularly described glass transition temperature and intrinsic viscosity), by incorporating therein up to about 10% by weight of a second cycloolefin copolymer, said second cycloolefin copolymer having a particularly described intrinsic viscosity and a glass transition temperature greater than about 50°C, but at least 25°C lower than that of the first cycloolefin copolymer, and a fatty acid ester of a polyhydric

alcohol. The subject resins are further characterized as having a Huntor b color value of less than 1.0 (claims 1 to 5, 7 and 8) or less than 0.8 (claims 6, 9 to 10 and 12 to 18). To more particularly describe the resins of this invention, the independent claims have been amended to specify that the first cycloolefin has a molar-mass distribution of less than 2 and that the resin is substantially free of zinc stearate.

While Sangane describes different blends of cycloolefin copolymers and includes fatty acid esters of polyhydric alcohols among the numerous additives that may be included as optional components of the compositions therein described, the patent fails to provide one skilled in the art with the motivation to provide compositions of reduced splay and haze by combining (a) a first cycloolefin copolymer as described by the subject invention with (b) a second copolymer having a Tg greater that 50°C but at least 25°C lower than that of the first cycloolefin copolymer and (c) a fatty acid ester. Comparative Examples C_2 and C_3 of the subject application show that when added to a first cycloolefin component, neither the fatty acid ester or second cycloolefin copolymer alone was effective in reducing splaying, however, when added in combination (see E_1), the resulting composition exhibited much less spaying. In the absence of zinc stearate, the values of haze compositions containing the combination of the second cycloolefin and fatty acid ester components (Examples E_1 and E_2) was extremely low, i.e., 0.001%, as was the yellowness index (0.94 and 0.93 respectively). In contrast, none of the compositions exemplified by Sangane et al. contain a fatty acid ester component as required by the subject compositions. While the haze values reported in the subject application were obtained by a different procedure, the values that are reported by Sangane et al. in its Examples and Comparative Examples (3.7% to 18.9%) appear to be significantly higher.

Fukuyama et al. discloses the use of pentaerythritol tetrastearate as a lubricant in impact modified thermoplastics, however, the compositions of Fukuyama are low gloss thermoplastic resin compositions that comprise a rubber, a gel polymer and a low molecular weight polyolefin polymer. Thus, Fukyama does not provide the motivation to combine pentaerythritol tetrastearate with the first and second cycloolefin copolymers of the subject application to achieve the benefits of this invention.

Braekner et al. discloses a substrate composed of at least one cycloolefin copolymer, wherein the cycloolefin copolymer has a molar-mass distribution Mw/Mn of less than 2, a Mw of less than/equal to about 30,000 g/mol and a glass transition temperature of about 120 to 220°C. Additionally, this citation discloses blends of two or more cycloolefin copolymers which have different molar masses and in which the glass transition temperatures are equal or do not differ from one another by more than about 20°C. At column 6, lines 51 to 57 the patent states:

> In order to achieve melt properties favorable for the chosen application, a plurality of polymer according to the invention may also be blended with one another. The blends are composed of mixtures of different COCs which, however, have the same glass transition temperature or one which does not differ by more than only about 20°C. See also, column 3, lines 29 to 33.

Accordingly, it is respectfully submitted that Braekner et al. teaches away from the resins of the subject invention which require the Tg of the second cycloolefin copolymer to be at least 25°C lower than that of the first cycloolefin copolymer.

It is respectfully submitted that one skilled in the art would not be motivated by Segane et. al., alone or in combination with Fukuyama et al. and/or Braekner et al., to combine a first cycloolefin component, a second lower Tg cycloolefin component and a fatty acid ester, all as described by the subject claims, to achieve the benefits of this invention. As

noted above, Fukuyama et al. discloses very different compositions and Breckner teaches away from combinations of cycloolefins having the Tg requirements of the subject application. Thus, the combination of either or both of these citations with Sagane et al. is not suggested by the art. It is further submitted that, individually and in combination, the citations fail to disclose or suggest the subject invention.

In view of the foregoing, reconsideration and allowance of the subject claims, as amended, is respectfully requested. A petition for an extension of time (two months) accompanies this response.

Respectfully submitted:

Karen E. Klumas
Reg. No. 31,070
Ticona LLC
86 Morris Avenue
Summit, NJ 07901
Telephone: 908-522-7867